

Translation

PATENT COOPERATION TREATY

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PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

511,033

Applicant's or agent's file reference SP21018HM	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/FR2003/001251	International filing date (day/month/year) 18 avril 2003 (18.04.2003)	Priority date (day/month/year) 23 avril 2002 (23.04.2002)
International Patent Classification (IPC) or national classification and IPC G06F 11/34		
Applicant FRANCE TELECOM		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.  <input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  These annexes consist of a total of _____ sheets.
3. This report contains indications relating to the following items:  I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 13 novembre 2003 (13.11.2003)	Date of completion of this report 28 September 2004 (28.09.2004)
Name and mailing address of the IPEA/EP  Facsimile No.	Authorized officer  Telephone No.

Form PCT/IPEA/409 (cover sheet) (January 1994)

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## I. Basis of the report

1. This report has been drawn on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

☒ the international application as originally filed.

☒ the description, pages 1-45, as originally filed,  
pages \_\_\_\_\_, filed with the demand,  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_,  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

☒ the claims, Nos. 1-10, as originally filed,  
Nos. \_\_\_\_\_, as amended under Article 19,  
Nos. \_\_\_\_\_, filed with the demand,  
Nos. \_\_\_\_\_, filed with the letter of \_\_\_\_\_,  
Nos. \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

☒ the drawings, sheets/fig 1/17-17/17, as originally filed,  
sheets/fig \_\_\_\_\_, filed with the demand,  
sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_,  
sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

2. The amendments have resulted in the cancellation of:

☐ the description, pages \_\_\_\_\_

☐ the claims, Nos. \_\_\_\_\_

☐ the drawings, sheets/fig \_\_\_\_\_

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

4. Additional observations, if necessary:

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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/FR 03/01251

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	1-10	YES
	Claims		NO
Inventive step (IS)	Claims	1-10	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-10	YES
	Claims		NO

## 2. Citations and explanations

## 1. Reference is made to the following document:

D1: NACHEF A: "MODELISATION DES SYSTEMS DISTRIBUES"  
TECHNIQUE ET SCIENCE INFORMATIQUES, L'AFCEP,  
PARIS, FR, vol. 12, no. 2, 1993, pages 163-192,  
XP000791204 ISSN: 0752-4072

2. The invention claimed in claim 1 concerns a method of generating a performance model from a functional model of a system composed of distributed software and hardware units in order to provide a service to at least one user. The method comprises the following steps:

- distribution of the requests representative of the system and identification of the corresponding execution flow for each group of requests;
- formalisation of the execution flows using notation that demonstrates the causal relationships and information characterising system resource usage;
- preparation of an intermediate model including a resource specification describing physical system hardware and an environment specification describing user behaviour;
- automation of the conversion of the intermediate model into a performance model.

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D1, which is considered the most relevant prior art, discloses a system for modelling distributed systems that enables a performance model to be generated from a functional model of a system composed of distributed software and hardware units to provide a service to at least one user.

The subject matter of claim 1 differs from D1 in that it discloses the possibility of describing upstream in a formal language the causal relationships between the various system units involved in the execution flows in order to prepare an intermediate model, which, supplemented with suitable information, can be automatically converted into a performance model.

The problem addressed by the present invention can thus be considered that of enabling the performance models to be produced automatically, with a level of abstraction such that more concrete structures, such as those used by the performance model, do not have to be handled.

This problem is solved by the use of a formal execution flow and resource usage description language capable of specifying dynamic behaviour, followed by the preparation of an intermediate model comprising, in addition to formalised execution flows, physical system resource and environment specifications, and which can ultimately be converted into a performance model.

Unlike claim 1, the functional model as per D1 is not a formalism enabling the causal relationships between the various software units of the system to be specified. It uses an architecture language (as opposed to a scenario language), which requires knowledge of the structure of objects, such as queues.

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The solution consisting in using a formal execution flow description language does not appear to be disclosed or suggested by the available prior art. Therefore the subject matter of claim 1 meets the PCT novelty and inventive step requirements (PCT Article 33(2) and (3)).

3. Claims 2 to 10 are dependent on claim 1 and hence likewise meet the PCT novelty and inventive step requirements (PCT Article 33(2) and (3)).

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